

I. AMENDMENT

In the Claims:

The following listing reflects amendments to the claims and replaces all prior versions and listings of claims in this application.

1. (Cancelled)

2. (Currently amended) The An isolated GapC protein of claim 1, wherein the protein is a *Streptococcus dysgalactiae* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 1A-1B (SEQ ID NO:4) of SEQ ID NO:4.

3-50. (Cancelled)

51. (Currently amended) A vaccine composition comprising a pharmaceutically acceptable vehicle and a GapC protein according to claim 2, wherein said GapC protein is selected from the group consisting of:

- (a) a *Streptococcus dysgalactiae* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 1A-1B (SEQ ID NO:4);
- (b) a *Streptococcus agalactiae* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 2A-2B (SEQ ID NO:6);
- (c) a *Streptococcus uberis* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 3A-3B (SEQ ID NO:8);
- (d) a *Streptococcus parauberis* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 4A-4B (SEQ ID NO:10);
- (e) a *Streptococcus iniae* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 5A-5B (SEQ ID NO:12);
- (f) a *Streptococcus* GapC protein having at least about 70% sequence identity to (a), (b),

~~(e), (d) and (e); and~~

~~— (g) immunogenic fragments of (a), (b), (c), (d), (e) and (f), said fragments comprising at least about 5 amino acids.~~

52. (Cancelled)

53. (Cancelled)

54-61. (Cancelled)

62. (Original) The vaccine composition of claim 51, further comprising an adjuvant.

63. (Currently amended) A method of producing a vaccine composition comprising the steps of

(1) providing a GapC protein according to claim 2 ~~or an immunogenic fragment thereof, said fragment comprising at least about 5 amino acids~~, and

(2) combining said protein with a pharmaceutically acceptable vehicle.

64. (Original) A method of treating or preventing a bacterial infection in a vertebrate subject comprising administering to said subject a therapeutically effective amount of a vaccine composition according to claim 51.

65. (Original) The method of claim 64, wherein said bacterial infection is a streptococcus infection.

66. (Original) The method of claim 65, wherein said bacterial infection causes mastitis.

67- 72. (Cancelled)

73. (Currently amended) A method of detecting *Streptococcus* antibodies in a biological sample, comprising:

(a) reacting said biological sample with an isolated GapC protein according to claim 2 under conditions which allow said *Streptococcus* antibodies, when present in the biological sample, to bind to said GapC protein to form an antibody/antigen complex; and

(b) detecting the presence or absence of said complex, thereby detecting the presence or absence of *Streptococcus* antibodies in said sample.

74. (Cancelled)

75. (Cancelled)

76. (Currently amended) An immunodiagnostic test kit for detecting *Streptococcus* infection, said test kit comprising a GapC protein according to claim 2 and instructions for conducting the immunodiagnostic test.

77. (Cancelled)